

REMARKS

Favorable reconsideration and allowance of the claims of the present application are respectfully requested.

Before addressing the grounds of rejection raised in the outstanding Office Action, Applicants take this opportunity to discuss the amendments to Claims 1 and 9. Claims 1 and 9 have been amended to recite a varactor structure that includes an inner well region having an upper surface which includes source and drain regions, wherein the source and drain regions are separated from the outer well regions of the varactor by isolation regions composed of a dielectric material. Support for the amendment to Claims 1 and 9 is found in Figure 1D of Applicants' disclosure, which clearly depicts that the source and drain regions (identified by reference number 32) of the device are present in an inner well region (identified by reference number 20B), and are separated from outer well regions (identified by reference number 20A) by isolation regions (identified by reference number 16). Further support for the amendment to Claims 1 and 9 is found in paragraph 0051 of Applicants' specification. Applicants submit that these features are not taught or suggested by the prior art. Turning to the present grounds of rejection.

Claims 1-3, 6-9 and 12-14 are rejected, under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent Application Publication No. 2003/0122128 to Coolbaugh et al. ("Coolbaugh et al.") in view of U.S. Patent Application Publication No. 2004/0114288 to Chen et al. ("Chen et al."). Applicants traverse the aforementioned rejection and submit the following.

"To establish a prima facie case of obviousness of a claimed invention all the claimed limitations must be taught or suggested by the prior art". *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 44, 496 (CCPA 1970). Applicants submit that the applied prior art fails to teach or

suggest a varactor structure that includes an inner well region having an upper surface which includes source and drain regions, wherein the source and drain regions are separated from the outer well regions of the varactor by isolation regions composed of a dielectric material, as recited in amended Claims 1 and 9.

Applicants submit that Coolbaugh et al. fails to render Applicants' invention unpatentable. Coolbaugh et al. fails to teach or suggest a structure including source and drain regions. Referring to page 3 of the present Office Action, Applicants observe that the Examiner alleges that paragraph 0043 of the Coolbaugh et al. reference discloses source and drain regions present in an upper surface of the Coolbaugh et al. structure. Referring to paragraph 0043, of Coolbaugh et al. as cited by the Examiner, Applicants observe that the portion of the Coolbaugh et al. reference that the Examiner is relying on to meet the claimed limitation of source and drain regions only discloses a sub-collector implant step. Applicants submit that this disclosure fails to teach or suggest a varactor structure that includes an inner well region having an upper surface which includes source and drain regions, wherein the source and drain regions are separated from the outer well regions of the varactor by isolation regions composed of a dielectric material, as recited in amended Claims 1 and 9.

Cheng et al. fails to fulfill the deficiencies of Coolbaugh et al. Cheng et al. also fails to teach or suggest a varactor structure that includes an inner well region having an upper surface which includes source and drain regions, wherein the source and drain regions are separated from the outer well regions of the varactor by isolation regions composed of a dielectric material.

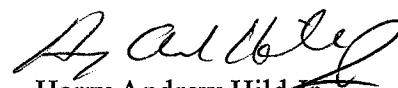
Referring to Figure 4B and paragraph 0020 of Cheng et al., Cheng et al. discloses that a P well (identified by reference number 38) is present between the deep N well (identified by reference number 36) and the N⁺ node (identified by reference number 40). The P well is a p-

type doped semiconductor material, which fails to meet the limitation of an isolation region composed of a dielectric material. Therefore, Cheng et al. fails to teach or suggest a varactor structure that includes an inner well region having an upper surface which includes source and drain regions, wherein the source and drain regions are separated from the outer well regions of the varactor by isolation regions composed of a dielectric material, as recited in amended Claims 1 and 9.

In view of the above, the applied prior art fails to teach or suggest each and every limitation of Applicants' claimed structure, as recited in amended Claims 1 and 9. Therefore, because the applied prior art fails to teach or suggest each and every limitation of Applicants' claimed structure, the present § 103 rejection has been obviated.

In light of the above, Applicants respectfully submit that all claims are in condition for allowance. Should the Examiner require anything further to place the application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the number listed below.

Respectfully submitted,



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